REMARKS

Applicant has carefully reviewed and considered the Final Office Action mailed on June 26, 2003, and the subsequent Advisory Action dated September 16, 2003, along with any references cited therewith.

Claims 1, 7, 15, and 21 are amended, claim 2 is canceled, and claim 29 is added; as a result, claims 1, 4-7, 9-29 are now pending in this application.

§103 Rejection of the Claims

Claims 1, 2, 4, 6, 7, 14, 15, 17, and 19

The office action mailed on June 26, 2003 stated that claims 1, 2, 4, 6, 7, 14, 15, 17, and 19 were rejected under 35 USC § 102(b) as being anticipated by Bollard, et al. (U.S. Publication No. US004845495A) in view of Woodgate, et al. (U.S. Publication No. US005917562A) and Hayes, et al. (U.S. Publication No. US006112140A). Applicant presumes the Examiner did not intend 102(b) based on the heading in the office action and the use of multiple references. Accordingly, the remarks provided herein address a 103 rejection for claims 1, 2, 4, 6, 7, 14, 15, 17, and 19.

The Examiner previously remarked that;

> Hayes teaches a flight management system providing for automatic control display unit (CDU) backup utilizing structured data routing. Hayes teaches that in the prior art systems the failure of one display would cause an undue burden on the pilot with the remaining operative display and that automatically providing the display on a redundant backup unit would relieve this burden. (Column 4, lines 50-56).

As described in Hayes, a CDU includes an upper face portion 34 and a lower face portion. The upper face portion includes an electronic display which is capable of displaying lines of text entered by the flight crew. (Column 2, lines 59-65). The CDU is not a display which graphically illustrates to the pilot important flight information. Hayes recognizes that the graphical presentation is provided by a main instrument panel 140 which includes left and right primary flight displays 142, 144,

left and right navigation displays 146, 148 and a central engine and crew altering display 149. CDUs are used to enter flight plans.

Hayes does not mention "a display adjacent to the bezel to automatically provide a graphical backup presentation of a set of important flight information data, including airspeed, attitude, altitude, communication, navigation, and engine data, upon the failure of one or more primary instrument displays." In Hayes, separate displays are dedicated as primary flight displays 142, 144, left and right navigation displays 146, 148 and a central engine and crew altering display 149. Hayes only discusses providing a redundant CDU 120 and routing data from a malfunctioned CDU, 112 or 114, to a redundant CDU 120.

In contrast, Applicant's independent claim 1, as amended, recites "a display adjacent to the bezel to automatically provide a graphical backup presentation of a set of important flight information data, including airspeed, attitude, altitude, communication, navigation, and engine data, upon the failure of one or more primary instrument displays." In Hayes, such data is provided on separate displays, e.g. the primary flight displays 142, 144, the navigation displays 146, 148, and the central engine and crew altering display 149. No mention is made in Hayes about any display failure, but rather only the failure of a CDU. No teaching or suggestion is made in Hayes to graphically present these various types of flight information data on one display. Hayes simply does not address anything beyond routing data between CDUs.

Bollard appears to describe a redundant pair of mission computers. Bollard illustrates separate devices for communications, navigation, and equipment sensors. That is, Bollard includes a pair of electronic attitude/director indicators (EADI), a pair of electronic horizontal situation indicator (EHSI), a pair of multifunction displays (MFDs) to assist in the control and monitoring of the aircraft subsystems and avionics equipment.

Bollard does not describe a single display to provide a backup presentation of communication, navigation, and engine data. Nothing is taught or suggested in Bollard regarding providing a graphical backup presentation of the contents of any one of these multiple displays on another display if a given display should fail since there are already two sets to every display.

Nor does Bollard recite automatically providing such a backup presentation should one or more of the devices of the redundant pair go down. Since each separate display has redundancy no action is needed. Hayes does not cure this deficiency since Hayes only describes re-routing CDU data if a CDU fails.

Similarly, the Woodgate reference does not teach or suggest a display providing a graphical backup presentation of a set of important flight information data, including airspeed, attitude, altitude, communication, navigation, and engine data, upon the failure of one or more primary instrument displays.

Applicant's independent claim 1, 7, 15, 21, and 29, as amended, recite language similar language to that described above. Thus, it is respectfully submitted that none of the cited references, either independently or in combination, teach or suggest each and every element and limitation of these independent claims. Accordingly, Applicant believes the same to be in condition for allowance.

Claims 1, 2, 4-7, and 9-28

The office action mailed on June 26, 2003 further stated that claims 1, 2, 4-7, and 9-28 were rejected under 35 USC § 102(b) as being anticipated by the Honeywell Primus Epic (Epic) avionics system (Al Ditter, An Epic in the Making, Commuter World, December 1996-January 1997, pages 16, and 18-21; William B. Scott, Pentium Powers 'Epic' Integrated Avionics, Aviation Week & Space Technology, November 18, 1996 pages 67-69; James Holahan, LCDs, Mice on the Flight Deck!, Aviation International news, November 1, 1996, pages 56-58; Fred George, Introducing Primus Epic, Business & Commercial Aviation, November 1996, pages 116, and 118-120) in view of Woodgate, et al. (U.S. Publication No. US005917562A) and Hayes, et al. (U.S. Publication No. US006112140A). Again, Applicant presumes the Examiner did not intend 102(b) based on the heading in the office action and the use of multiple references.

These references, as applied to the above claims suffer from the same deficiencies addressed in connection with Bollard, Woodgate, and Hayes. That is, none of the references, either independently or in combination, teach or suggest a display to automatically provide a graphical backup presentation of a set of

important flight information data upon the failure of one or more primary instrument displays.

Further, in the Applicant's previous response, claim 7 was amended to recite that important flight information data can be provided to either a first or a second cockpit instrument panel, "in a substantially similar format size, location, and perspective when one of the first or the second cockpit instrument panels fail, in a backup mode." Claim 15, as amended, recites;

> a primary flight display (PFD) on a cockpit instrument panel;
> a secondary flight display (MFD) on the cockpit instrument panel; and
> wherein both the PFD and the MFD are adapted to graphically display full flight information data, originally provided between the PFD and MFD, in an identical format and size automatically if either the PFD or MFD is inoperable.

The Examiner stated that the combination of Bollard and Woodgate do not teach that the backup display is provided in a substantially similar format size, location and perspective. The Examiner then went on to apply Hayes as teaching a flight management system providing for automatic CDU backup utilizing structured data routing.

As noted above, there is no teaching in Hayes for replacing failed primary flight displays 142, 144, failed navigation displays 146, 148, or a central engine and crew altering display 149. Hayes only addresses routing data from a failed CDU, capable of displaying lines of text entered by the flight crew, to a redundant CDU. No mention is made of displays themselves failing or replacing the graphical content of a remaining display with the content of the failed display in a substantially similar format size, location, and perspective as was provided the display which failed. Applicant's Figure 3, and independent claims 7 and 15 recite this ability.

Lastly, Applicant respectfully traverses the Examiner's statement in the Response to Arguments that showing "communication, navigation, and equipment sensor settings on one backup display is typical of the state of the art in aircraft display systems." None of the references teach or suggest such a capability. As described above, Bollard and Hayes each clearly define a myriad of different displays for these three different functions. Bollard, shows a pair of electronic attitude/director indicators (EADI) to provide attitude and direction, a separate pair

of electronic horizontal situation indicator (EHSI) to display compass information, and a separate pair of multifunction displays (MFDs) to assist in the control and monitoring of the aircraft subsystems and avionics equipment. Hayes similarly shows separate primary flight displays 142, 144, navigation displays 146, 148, and central engine and crew altering display 149.

Conclusion

Applicant respectfully submits that the claims are in condition for allowance and notification to that effect is earnestly requested. The Examiner is invited to telephone Applicant's attorney at (612) 659-9340.

If necessary, please charge any additional fees or credit overpayment to the Deposit Account No. 501-791. **Additionally, please direct all future correspondence regarding this case to: 1200 E. 151ST ST., OLATHE, KS 66062, ATTENTION: DEVON A. ROLF.**

CERTIFICATE UNDER 37 CFR 1.8: The undersigned hereby certifies that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail, in an envelope addressed to: **MS RCE** Commissioner for Patents, P.O. BOX 1450 Alexandria, VA 22313-1450, on this 16th day of October, 2003.

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